

FAULT LINES

AMERICA'S MOST SEGREGATING SCHOOL DISTRICT BORDERS



TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
INTRODUCTION	8
FINDINGS	11
SPOTLIGHT	14
DETROIT, MI	14
BIRMINGHAM, AL	15
CLAIRTON, PA	16
DAYTON, OH	18
BALSZ, AZ	19
SUMMARY	21
APPENDIX	23

EXECUTIVE SUMMARY

INTRODUCTION

The chasms between our school districts are growing wider. Today, half of America's schoolchildren are enrolled in high-poverty school districts, often bordered by much more affluent neighbors. In this report, we explore the most staggering educational fault lines in the country – specifically, the pairs of contiguous districts where the distance between the haves and the have-nots is greater than anywhere else, nationally and within each state.

Socioeconomic segregation is rising in America's schools, in part because of the structure of education funding. The over reliance on locally raised property taxes to fund public schools gives wealthier communities the permission to keep their resources away from the neediest schools. This creates a system of school district borders that trap low-income children in high concentrations of poverty, while more privileged peers live in better-resourced communities, often right next door.

While it is well known that students growing up in disadvantaged families and communities face outsized challenges and often start school with tremendous learning gaps, the fact is high-poverty districts usually have less per-pupil funding than wealthier districts do in the same state, even after local tax revenues are supplemented with state funds. And when entire districts are segregated into regions of profound poverty, little can be done to integrate the schools within. The schools in these districts face tremendous impediments to teaching and learning, and yet because of district borders, low-income students are further deprived of the benefits from the financial and cultural capital of better-off peers that they would encounter in an integrated school.

Segregation across school district lines is extremely difficult to combat. In *Milliken v. Bradley*, a 1974 United States Supreme Court case challenging the racial segregation in Detroit Public Schools, the Court ruled that even in a situation where districts are too racially homogenous to accomplish meaningful integration internally,

MILLIKEN V. BRADLEY

In 1970, a group of African-American parents, in partnership with the Detroit chapter of the NAACP, filed suit against the state of Michigan, alleging that government action had led to racial segregation in the Detroit school system.

The evidence was clear that Detroit schools were segregated by race, and that government action had played a role in keeping them that way. However, the District Court noted a problem: Detroit's population had become so predominately African-American that there simply were not enough white schoolchildren for any plan to achieve meaningful integration within the city. In addition, the judge in the case feared that any integration efforts within Detroit's borders would simply trigger the flight of the city's few remaining white families to the suburbs. The Court therefore ordered state officials to craft a desegregation plan that included not only the city of Detroit, but also the districts in the surrounding suburbs. Such a plan would transfer some Detroit students to nearby, mostly white school districts and vice versa, producing true racial integration. "School district lines," wrote the District Court, "are simply matters of political convenience and may not be used to deny constitutional rights."

Detroit's neighboring districts fought against being included in the desegregation plan, and, along with the state of Michigan, appealed the case to the Supreme Court, which had the final word on *Milliken* in 1974. In a 5-4 decision, the justices overturned the lower court's ruling, finding that Detroit was indeed segregated, but neighboring districts could not be compelled to take part in a solution. Chief Justice Burger wrote that school districts were autonomous entities and their boundaries should be considered sacrosanct; as long as the neighboring districts had taken no specific action to further Detroit's segregation, they could decline to take part in a solution. The walls separating Detroit from its suburbs—and separating all majority-minority districts from their mostly-white neighbors—could not be breached.

In many parts of the country, this deference to school district boundaries has removed all teeth from the Court's decision in *Brown v. Board of Education*. Racial segregation between, rather than within, school districts has been allowed to persist, and in fact, the proliferation of school districts, each with its own boundary, has caused increases in racial segregation over time.

Today, the law's excessive regard for school district boundaries has cemented another kind of segregation: income segregation. Class divides between school districts are widening, and there's little that can be done as long as the Supreme Court holds that school district borders may not be crossed in the service of fairness and justice.

EXECUTIVE SUMMARY

desegregation efforts cannot be enforced across school district borders. This decision significantly diminished the capacity of courts and governments to integrate schools and cleared the way for district borders to be used as lawful tools of segregation. Additionally, there is no requirement that school district boundaries be evaluated or updated, either based on changing demographics or to ensure a just outcome for students and communities. Together, these legal realities mean that there is little recourse to address either racial or income-based segregation across school district borders.

Despite evidence of the many benefits of income-integrated school districts, the deference to local borders as they exist, in concert with current school funding systems and shifting demographic landscapes, results in gross deprivation of those benefits for millions of schoolchildren. School district boundaries are barriers to progress that segregate children and exacerbate the very inequities our system of public schools was intended to overcome.

METHODS

To explore how school district borders isolate the neediest students, EdBuild conducted an analysis of each of these boundaries across the country. Using spatial network analysis, each pair of school district neighbors was identified. An algorithm then identified the shape and location of each shared border, and assigned to it the value of the difference in childhood poverty rates for the two districts on either side. The completed data set contains over 33,500 borders. This report presents summary information regarding America's 50 most segregating school district borders, with a specific focus on the five worst.

FINDINGS

AMERICA'S MOST SEGREGATING SCHOOL DISTRICT BORDERS

AVERAGE DIFFERENCE IN SCHOOL-AGE POVERTY RATE: 37 PERCENTAGE POINTS

A typical school district border in the United States separates a pair of districts whose student-age poverty rates differ by seven percentage points. The difference between the 50 most segregated neighbors ranges from 34 to 42 percentage points: an average that is more than five times the national mean.

Among the 50 pairs, the wealthier school districts have a poverty rate of just 9 percent, while their neighbors average 46 percent— 400 percent higher. This means that wealthier peers enjoy a poverty rate that is less than half the national average; whereas their neighbors enroll over 150 percent more impoverished students than the average US district. The 50 higher-income areas are also far smaller enclaves of wealth— their schools serve 15,000 less students on average.

Additionally, the average homes in the wealthier districts are worth \$131,000 more than their neighbors'. Because local funds for education are tied to property wealth, high-poverty districts are not able to generate as many funds locally. In fact, even though several of the 50 high-poverty districts tax themselves at a higher rate than their neighbors, they generate \$4,500 less per student from local taxes.

The 50 most segregating borders are found in only 14 states. Ohio contains nine, more than any other state. Alabama has seven. New York and Pennsylvania each contain six. Twenty-nine borders, almost 60 percent of the top 50, are located in the Rust Belt region. States with countywide school districts, like those in the south and the west, are almost entirely absent from the list.

EXECUTIVE SUMMARY

Detroit Public Schools - Grosse Pointe Public School System

DIFFERENCE IN SCHOOL-AGE POVERTY OF 42.7 PERCENTAGE POINTS

Today, the most segregating school district border in the country separates Detroit Public Schools and the Grosse Pointe Public School System. The divide between these two districts has a long history. In 1970, the NAACP joined with a group of families in Detroit to sue the state of Michigan over the racial segregation in Detroit Public Schools.ⁱ The District Court judge who heard the case ordered a school desegregation plan that called for the busing of children between Detroit and neighboring districts, including Grosse Pointe.ⁱⁱ Along with the other suburban districts, Grosse Pointe refused to take part and appealed to have the plan overturned, and in 1974 the US Supreme Court did just that. It ruled that integration efforts should stop at school district borders, thereby condoning vast disparities among school districts—even those that are neighbors.

Income segregation in the Detroit metropolitan area parallels the racial segregation that inspired the *Milliken* case and has worsened since the case was first argued. In 1970, the poverty rate among all residents living within the Detroit Public Schools was 15 percent, while the same rate within Grosse Pointe Public School System was 3 percent. By 2012, this 12-point poverty gap had grown to a 33 percentage point chasm. Today, 1 in 2 children living within the Detroit Public Schools is impoverished, compared to just 1 in 15 in Grosse Pointe.

Birmingham City School District - Vestavia Hills City School District & Mountain Brook City School District

DIFFERENCE IN SCHOOL-AGE POVERTY OF 42.3 & 42.0 PERCENTAGE POINTS, RESPECTIVELY

Birmingham has more than twice as many neighbors as the average school district, and of the 13 borders it shares with adjoining districts, 6 are counted among the 50 most segregating in the country—more than any other district. The worst of these borders separate Birmingham from Vestavia Hills and Mountain Brook. Vestavia Hills and Mountain Brook, like most of Birmingham's well-off neighbors, were formerly a part of the Jefferson County School District—the county school district near Birmingham—but seceded to form their own independent districts.ⁱⁱⁱ These secessions established wealthy enclave districts that present a stark contrast to Birmingham.

While the suburban neighbors have grown more populous and have prospered in recent decades, enrollment in Birmingham's schools have plummeted, and its poverty rates have risen as better-off families left the district. In the 1999-2000 school year, Birmingham enrolled 38,120 students and had a 27 percent child poverty rate. Today it enrolls 24,858 students and has a 49 percent child poverty rate—7 times higher than Vestavia Hills and Mountain Brook, which both have poverty rates of just over 6 percent.

Clairton City School District - West Jefferson Hills School District

DIFFERENCE IN SCHOOL-AGE POVERTY OF 41.7 PERCENTAGE POINTS

Clairton and West Jefferson Hills school districts are located in Allegheny County, Pennsylvania, a region that suffered an enormous loss of manufacturing jobs in the second half of the 20th century.^{iv} Clairton was hard hit by the loss of industry, and by 2014, after years of middle class flight, 48.2 percent children in the city

EXECUTIVE SUMMARY

lived in poverty. By contrast, Clairton's neighboring district of West Jefferson Hills serves three boroughs that collectively have a childhood poverty rate of 6.5 percent. Because the communities served by West Jefferson Hills were less impacted by the economic downturn, this district has a healthy property tax base, allowing 73 percent of its non-federal education revenue to be generated locally. In Clairton, on the other hand, local receipts are low enough that 71 percent of non-federal education funding must come from the state. This puts Clairton in a tenuous situation when state funding for education is uncertain, which has been the case repeatedly since the state's education budget was slashed in 2011.^v Last winter, West Jefferson Hills approved plans for construction of a new, \$67.4 million high school,^{vi} while Clairton was forced to consider closing down the entire school district mid-year.^{vii}

Dayton City School District - Beavercreek City School District & Oakwood City School District

DIFFERENCE IN SCHOOL-AGE POVERTY OF 40.7 & 40.3 PERCENTAGE POINTS, RESPECTIVELY

As in many other cities throughout the Rust Belt, Dayton, Ohio lost the majority of its manufacturing industry during the second half of the 20th century, and with it went much of the city's population. In 2014, Dayton City School District had a school-age poverty rate of 47.2 percent; across two of its borders, the picture is very different. In Beavercreek City School District, the poverty rate in 2014 was only 6.6 percent, while in Oakwood City School District, just 7.0 percent. In 1989, Ohio started a voluntary interdistrict open enrollment program, allowing school districts the privilege to decide whether to admit transfer students from other districts.^{viii} Neither Beavercreek nor Oakwood City participates in the interdistrict open enrollment program—like many of the districts surrounding Ohio's urban centers.^{ix} This means that elementary students at Eastmont Park in Dayton cannot opt to enroll in Parkwood Elementary in Beavercreek. These schools are located within a mile of the district border, but Eastmont Park received a grade of 'F' from the state for its progress towards closing achievement gaps based on race, disability, and income,^x while Parkwood Elementary received a grade of 'A' on the same metric.^{xi}

Balsz Elementary School District - Scottsdale Unified School District

DIFFERENCE IN SCHOOL-AGE POVERTY OF 40.3 PERCENTAGE POINTS

Balsz Elementary School District serves students on the east side of Phoenix and shares its northern and eastern borders with Scottsdale Unified School District. While the school-age poverty rate in Scottsdale is 10.6 percent, over half of children (51.0 percent) in Balsz live in poverty. This vast gap is likely due in part to the sharp rise in Balsz's population of immigrants—a group that is more likely to be low-income than those native to the States.^{xii} In 1980, Balsz Elementary and Scottsdale Unified school districts had nearly identical rates of foreign-born residents living within their boundaries—both at just under five percent. Just over 30 years later, 11 percent of the residents of Scottsdale Unified had been born outside of the United States, while in Balsz, this group had grown to comprise 23 percent of all residents—an increase of over 400 percent.

The demographic shift is reflected in the classroom as well. Today 7 percent of Scottsdale's students have limited English proficiency, while in Balsz, a full 46 percent of students do. Despite the extra costs associated with providing supplemental services for students in poverty and those with limited English proficiency, Scottsdale

EXECUTIVE SUMMARY

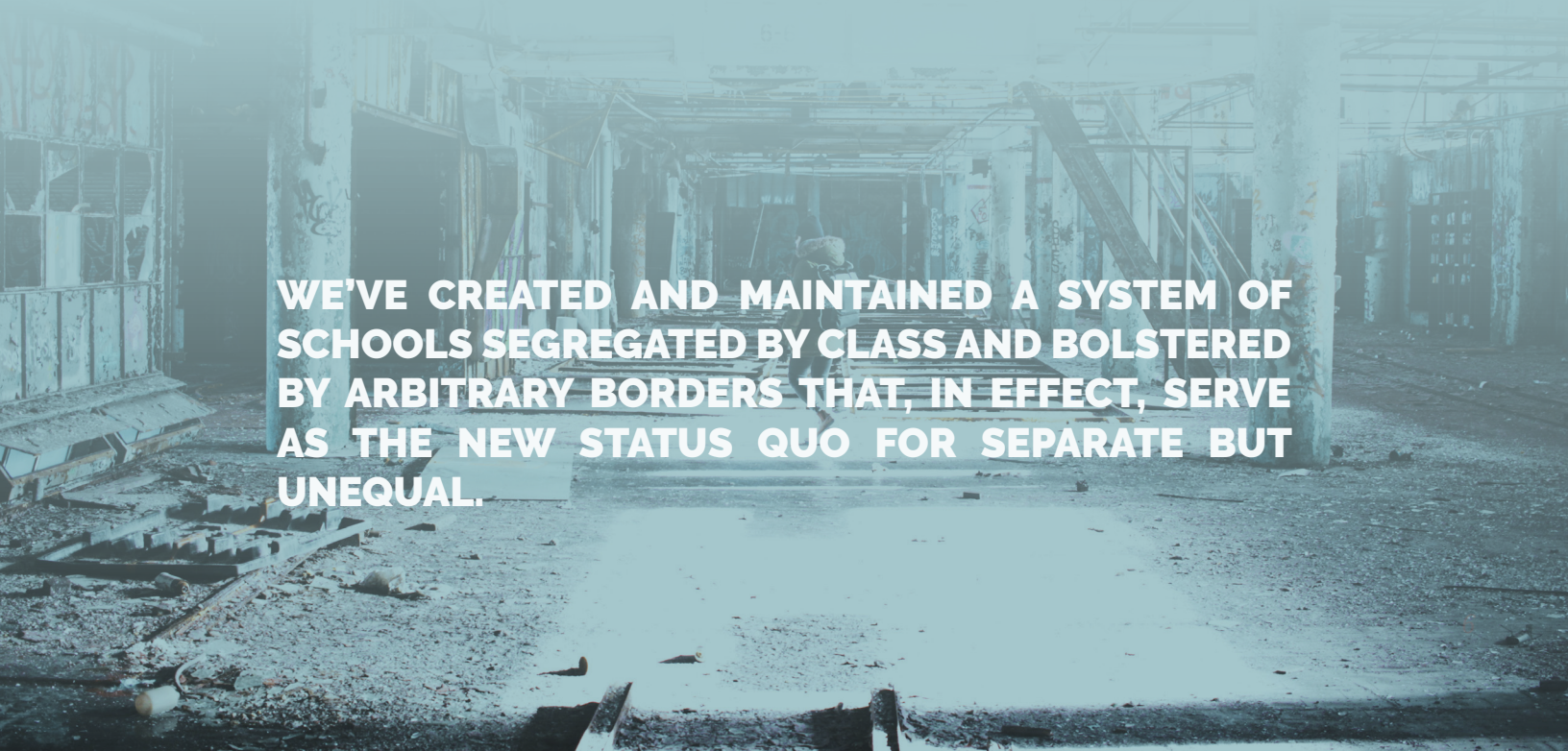
receives \$9,174 per-pupil in state and local revenues, while Balsz receives a full 30 percent less – just \$6,438 per-pupil.

CONCLUSION

When the Supreme Court established that desegregation orders could not be enforced across district boundaries, it significantly reduced the possibility of achieving meaningful integration. And because America relies so heavily on local property taxes to raise funds for education, the inability to cross district boundaries institutionalizes income segregation and contributes to vast funding disparities among public schools. In this report, we highlight the worst examples of socioeconomic segregation across school district borders as illustrations of a problem that can be seen all across the country.

These divisions are harmful for all students, but especially for those who reside on the wrong side of these borders. There you will find 26 million children living within high-poverty school districts, effectively trapped by impermeable borders, while greater educational opportunities often are being enjoyed by their better-off peers right next door.

The fact, too seldom acknowledged, is that district boundaries themselves compound the inequalities that our public schools were intended to conquer. In present day America, we allow invisible lines to determine the fate of our youngest and most vulnerable citizens. While many focus on policies that will bring more resources into these underserved districts, very few question why these lines exist in the first place. Our wealthy are consigning lower-income students to a lesser caste by cordoning off their wealth and hiding behind the notion of “local control”. We’ve created and maintained a system of schools segregated by class and bolstered by arbitrary borders that, in effect, serve as the new status quo for separate but unequal.



WE’VE CREATED AND MAINTAINED A SYSTEM OF SCHOOLS SEGREGATED BY CLASS AND BOLSTERED BY ARBITRARY BORDERS THAT, IN EFFECT, SERVE AS THE NEW STATUS QUO FOR SEPARATE BUT UNEQUAL.

INTRODUCTION

While most turn a blind eye, segregation is rising in America's public schools. According to the Center for Education Policy Analysis, in the largest metropolitan areas, income-based segregation between school districts grew appreciably between 1990 and 2010.^{xiii} Today, over 26 million—48 percent of school-age children—live within the bounds of a high-poverty school district. Often, just on the other side of an invisible but effectively impermeable district border, their more privileged peers live in better-resourced communities and are taught in classrooms where they are able to learn and grow with abundant resources that are unencumbered by the challenges their peers face every day. Whereas some students struggle to find a safe route to school, others just blocks away walk into bright, shining classrooms ready to start the day.

Today, the majority of income segregation in schools is based on sorting between districts rather than within them,^{xiv} and growing income segregation is driven largely by families with children.^{xv} Families use their available residential choices to abandon their neighbors and fully resource their own schools, leaving behind entire districts that are increasingly concentrated with poor students.^{xvi} The result is that 70 percent of children living below the poverty line reside within high-poverty school districts. And when districts are segregated—either predominantly poor or largely wealthy, little can be done to integrate the schools within their borders. This means that the vast majority of the 26 million children living within high-poverty districts attend high-poverty schools. These schools face tremendous impediments to teaching and learning because they must try to overcome the many hurdles their students face as a result of growing up in disadvantaged communities.

Segregation is bad for communities, their kids, and the schools that serve them.

High-poverty communities face conditions that have a disproportionate, negative impact on the social and economic outcomes of their residents, especially children. It has been well-established that individuals living in impoverished neighborhoods must contend with financial insecurity, high rates of violence and crime, and mental and physical health problems, among numerous other daily trials.^{xvii} In addition, the youngest members of these communities are less likely to attend preschool, or to be exposed to books and vocabulary development in the home.^{xviii} For the children who grow up in this context, these conditions are hindrances to learning and development.^{xix}

Due to no fault of their own, low-income children begin school at a scholastic disadvantage relative to their better-off peers.^{xx} Schools must try to overcome this initial deficit, as well as the continued obstacles these students face throughout their earliest years. Indeed, studies have shown that when low-income children attend schools with high concentrations of low-income peers, their achievement is further hindered.^{xxi} So when district boundaries segregate students into high-poverty schools and districts, they exacerbate the academic challenges faced by poor children.

Additionally, when low-income students have the rare opportunity to attend well-integrated school districts, they can benefit from positive peer effects that come from attending schools with their better-off peers.^{xxii} These advantages may result from

INTRODUCTION

greater exposure to students who are more likely to be high achieving, or through exposure to advantageous social networks and norms that result from interacting with students from middle-class backgrounds.^{xxiii} Importantly, the benefits of income integration are not restricted to low-income children—middle- and upper-income children benefit from diverse academic settings as well.^{xxiv} In this way, income segregation disadvantages all children.

Resources matter for districts serving children in poverty.

Because they are tasked with addressing income-based achievement gaps that are present when children start school, high-poverty schools and districts require extra funding. Several relatively recent research findings suggest that when poor districts are given additional funds, achievement gaps are reduced and children in these districts—low-income children in particular—experience academic and economic benefits. Card and Payne (2002) found that the equalization of spending between richer and poorer districts led to the narrowing of test score gaps between students of different backgrounds.^{xxv} Lafortune, Rothstein, and Schanzerbach (2016) determined that increased funding for low-income districts yielded score increases on the National Assessment of Educational Progress.^{xxvi} And, perhaps most significantly, research from Jackson, Johnson, and Persico (2016) found that increasing the per-pupil funding allocated for the education of low-income students by 10% led to measurable increases in educational attainment and future wages and decreases in rates of adult poverty.^{xxvii} The researchers also predicted that an increase of 25% in per-pupil spending could eliminate the difference in outcomes between poor and non-poor students.

Despite this evidence, high-poverty districts tend to have less per-pupil funding than wealthier districts in the same state. Because property taxes play such an important role in generating funds for schools, property-poor communities—including the vast majority of high-poverty districts—are at a disadvantage relative to wealthier communities. While state funding for schools is meant to help defray this imbalance, in nearly all cases, states fail to sufficiently address the inequities in local communities' ability to generate local funds.^{xxviii} For the nation as a whole, when we compare the education dollars available in highest- and lowest-poverty districts within each state, we find that, on average, high-poverty school districts in each state receive five percent, or \$500, less per student than wealthy ones do. This leaves high-poverty districts without the resources they need to give low-income children a fighting chance to become educated and participating members of our society.

Integrated districts are better for kids, so why does segregation still exist?

There is no doubt that low-income students are harmed by a system of borders that effectively quarantine them into underserved districts. One of the driving factors of this type of income sorting is the way school funding is raised and distributed. The overreliance on local property taxes for raising funds in the United States, coupled with the fact that education dollars stop at the school district border, means that wealthier communities are incentivized to segregate themselves into economically homogenous districts in order to keep their resources in the schools that serve their

INTRODUCTION

own children. America has permitted our schools to become a system anathema to our ideals, funding education in a manner that prevents a vast number of students from accessing an equal start in life.

In some cases, this neglect is an effect of our larger, polarized economy. In recent decades, many areas have faced challenging shifts in the economy and demographics over time. Deindustrialization has left many regions with little to no employment opportunity, spurring an exodus of white and middle class families to the suburbs.^{xxix} This rapid population loss has led to escalating poverty rates as the remaining population was constituted by an increasing number of those left behind, without the means to leave.^{xxx} Other areas have experienced an influx of immigrant families, often low-income, who are altering the landscapes of their new communities. These demographic changes have impoverished many communities and reduced the resources available to their schools in order to address the increasing challenges that their students face.

What results is a network of school district borders that increasingly divide children by family and community wealth and trap low-income students in education systems plagued by concentrated poverty. And because the United States Supreme Court ruled in *Milliken v. Bradley* that integration efforts could not be enforced across school district boundaries (see page 3), there is little recourse to overcome the exclusionary nature of district borders. This decision cleared the way for district borders to be used as lawful tools of segregation, and diminished the role of the courts to demand otherwise.

Exacerbating the problem, there is no requirement that school district boundaries be reevaluated or updated based on changing demographics. This is unlike other political boundaries including congressional districts, which the law recognizes must be amended to keep up with growing and shifting populations in order to maintain a fair and democratic society. Because our schools are treated differently, districts have not been evaluated in generations, and those that find their population or wealth dwindling are left with nowhere to turn. Despite understanding the many benefits of income-integrated school districts, our deference to borders as they have always existed, in concert with the way we fund schools, has left us with a system of highly segregated school districts that shortchange the children who have the most to gain from public schooling—and robs our society of the benefits that could come from their prosperity.

To explore how school district borders isolate the neediest students, we have conducted an analysis of every school district boundary in the country. Using spatial network analysis, each pair of school district neighbors was identified. An algorithm then assigned the shape and location of each shared border a consequent value of the difference in childhood poverty rates for the districts on either side. EdBuild's completed data set contains over 33,500 borders.



In this report we highlight the 50 borders that are the most segregating by student poverty rate, and tell detailed stories about the 5 most segregating borders. These borders are representative of the path toward income

FINDINGS

segregation in America's school districts. They exemplify the damage wrought by the sacrosanctity of borders in the face of growing inequality arising from deindustrialization, the abandonment of cities by the middle class, and immigration, as well as by the inadequacy of attempts to address these issues. These boundaries are barriers to progress that segregate children and exacerbate the very inequities public education was intended to overcome.

The 50 most segregating school district borders in the country shine a spotlight on a major defect in the US education system. Each of these borders separates two very different school districts—one where there is very little poverty among school-age children, and one where the rate of poverty is very high.

The average district abuts five others. Two hundred and fifty-three districts have 10 or more neighboring districts, including the Chicago Public Schools which borders 33, the highest number of neighbors in our analysis. On the other end of the spectrum, 180 “island” districts have just one border that they share with a district that encircles them entirely. In some cases, these islands are wealthy enclaves amid seas of poverty, while in others they are pockets of need within affluent areas.^{xxxi} Across the country, districts that share a border differ in student-age poverty rates by seven percentage points, on average.

However, many of the borders in EdBuild's data set reveal a much more severe contrast. Fully 10 percent of America's borders split 2 districts whose poverty rates differ by at least 15 percentage points—more than double the average—and 267 borders in the country divide districts with a poverty rate difference of 30 percentage points or greater.

When narrowing the focal point to the top offenders, the average gap in school-age poverty rates across the 50 most segregating borders is a stunning 37 percentage points—nearly 430 percent higher than the national gap. And while the average school-age poverty rate of the wealthy areas in our data is just 9 percent, the average poverty rate among high-poverty districts is 46 percent -- 400 percent higher. Even the lowest of the 50 most segregating borders in the country lies between 2 districts with a 34 percentage point difference in their poverty rates.

These disparities in school-age poverty mirror other economic inequalities for the residents of these districts, and of the school districts themselves. Across the 50 worst borders, the residents of the low-poverty districts have a median household income that is \$42,379 more, on average, than their neighbors. Likewise, the median value of owner-occupied houses in the more affluent districts is \$130,890 higher than the median value of such homes they border. Given these figures, and because local revenues for schools are tied to property wealth within a community, it is unsurprising that the high-poverty districts generate less per-pupil revenue locally than do the low-poverty districts with which they share a border. Low-poverty districts generate an average of \$4,504 more per pupil from local revenues than high-poverty districts do across the 50 worst borders. Even after compensatory education revenues are distributed by the state, high-poverty districts receive only \$742 more per-pupil than low-poverty districts, despite serving a drastically needier student population.

The country's 50 most segregating borders are concentrated in only 14 states. The

FINDINGS

state that contains the most such borders is Ohio, which has 9 borders among the worst 50. Ohio is followed by Alabama, with seven, and New York and Pennsylvania, which each have six. The Rust Belt accounts for a disproportionately large share of the worst borders, with upstate New York, Pennsylvania, Ohio, Michigan, eastern Wisconsin, and Illinois together accounting for a full 29 borders—nearly 60 percent of the list. It is highly likely that industrial decline, and the associated departure of the middle class from former manufacturing towns, has played an outsized role in intensifying inter-district income segregation nationally.

Most states don't organize school districts around or within county lines.^{xxxii} Of the thirteen states that do so, only one (Alabama) appears in the most segregated states in our analysis. This suggests that states that permit small, non-municipal lines to be drawn around privilege may be more likely to be socioeconomically homogenous. In essence, the ability to draw narrow district boundaries can lead to intentional interdistrict segregation by income.

It is no wonder then that the wealthier districts among the 50 tend to serve fewer students than their high-poverty neighbors. The high-poverty districts on these borders enroll over 15,000 more students, on average, than their low-poverty counterparts. In fact, almost half of the low-poverty districts in our findings enroll fewer than 3,000 students, while only 1 in 4 of the high-poverty districts have enrollments this low.

There is a clear pattern of inequality among the 50 most segregating borders. Though we have chosen to highlight the borders at the very top of this list, the stories of Detroit, Birmingham, Clairton, Dayton, Balsz, represent the most egregious instances of school district boundaries that segregate children based on the wealth of their families. They are also illustrative of the disparities contained in the broader list of the 50 most segregating borders in the country.

FINDINGS

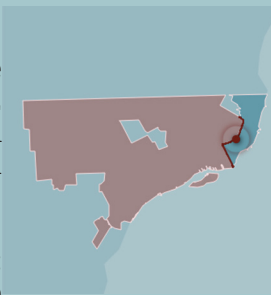
National Rank	State	Low Income District	Poverty Rate	Enrollment	High-Income District	Poverty Rate	Enrollment
1	Michigan	Detroit City School District	49%	49,043	Grosse Pointe Public Schools	7%	8,328
2	Alabama	Birmingham City School District	49%	24,858	Vestavia Hills City School District	6%	6,762
3	Alabama	Birmingham City School District	49%	24,858	Mountain Brook City School District	7%	4,477
4	Pennsylvania	Clairton City School District	48%	785	West Jefferson Hills School District	7%	2,831
5	Ohio	Dayton City School District	47%	14,209	Beavercreek City School District	7%	7,454
6	Arizona	Balsz Elementary District	51%	2,719	Scottsdale Unified District	11%	24,866
7	Ohio	Dayton City School District	47%	14,209	Oakwood City School District	7%	2,087
8	Ohio	Youngstown City School District	46%	5,408	Poland Local School District	7%	2,078
9	Colorado	Sheridan School District 2	49%	1,583	Littleton School District 6	9%	15,830
10	Illinois	Carbon Cliff Barstow School District 36	45%	309	Geneseo Community Unit School District 228	6%	2,596
11	Alabama	Birmingham City School District	49%	24,858	Trussville City School District	10%	4,269
12	Missouri	St. Louis City School District	43%	27,017	Webster Groves School District	4%	4,573
13	Pennsylvania	Reading School District	48%	17,487	Schuylkill Valley School District	10%	1,961
14	Pennsylvania	Sto Rox School District	47%	1,419	Montour School District	9%	2,802
15	New York	Syracuse City School District	46%	21,212	Westhill Central School District	8%	1,793
16	Alabama	Birmingham City School District	49%	24,858	Shelby County School District	11%	22,809
17	Ohio	Youngstown City School District	46%	5,408	Canfield Local School District	9%	2,756
18	Ohio	Cleveland Municipal School District	49%	38,562	Cuyahoga Heights Local School District	11%	862
19	Missouri	St. Louis City School District	43%	27,017	Clayton School District	5%	2,587
20	Ohio	Northridge Local School District	53%	1,751	Vandalia Butler City School District	15%	3,124
21	Alabama	Birmingham City School District	49%	24,858	Hoover City School District	11%	13,943
22	New York	Rochester City School District	43%	30,295	Penfield Central School District	5%	4,475
23	Pennsylvania	Reading School District	48%	17,487	Governor Mifflin School District	11%	4,064
24	Ohio	Cleveland Municipal School District	49%	38,562	Fairview Park City School District	11%	1,783
25	New York	Utica City School District	45%	9,717	New Hartford Central School District	8%	2,606
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27	Pennsylvania	Reading School District	48%	17,487	Wilson School District	11%	5,866
28	Illinois	Cahokia Community Unit School District 187	45%	3,642	Millstadt Consolidated Community School District 160	8%	791
29	Kentucky	Covington Independent School District	47%	4,218	Campbell County School District	10%	4,900
30	California	Perris Elementary School District	50%	5,882	Corona Norco Unified School District	13%	53,782
31	New York	Rochester City School District	43%	30,295	Brighton Central School District	6%	3,538
32	New York	Syracuse City School District	46%	21,212	Jamesville DeWitt Central School District	10%	2,891
33	Pennsylvania	Reading School District	48%	17,487	Wyomissing Area School District	12%	1,899
34	Alabama	Besemer City School District	47%	3,995	Hoover City School District	11%	13,943
35	Ohio	Cleveland Municipal School District	49%	38,562	Shaker Heights City School District	13%	5,322
36	Michigan	Benton Harbor Area Schools	43%	2,658	St. Joseph Public Schools	8%	2,882
37	California	Perris Elementary School District	50%	5,882	Menifee Union Elementary School District	14%	10,596
38	Wisconsin	Milwaukee School District	39%	78,516	Mequon Thiensville School District	4%	3,576
39	New Jersey	Paulsboro Borough School District	41%	1,171	East Greenwich Township School District	6%	1,218
40	New Jersey	Camden City School District	41%	11,660	Haddon Township School District	6%	2,056
41	Kentucky	Covington Independent School District	47%	4,218	Kenton County School District	12%	14,698
42	Wisconsin	Milwaukee School District	39%	78,516	Hamilton School District	5%	4,685
43	Connecticut	Hartford School District	39%	21,286	South Windsor School District	5%	4,242
44	Wisconsin	Milwaukee School District	39%	78,516	Menomonee Falls School District	5%	4,200
45	Ohio	Cleveland Municipal School District	49%	38,562	Berea City School District	15%	6,880
46	New Jersey	Paulsboro Borough School District	41%	1,171	West Deptford Township School District	7%	2,971
47	Alabama	Birmingham City School District	49%	24,858	Homewood City School District	15%	3,907
48	Missouri	St. Louis City School District	43%	27,017	Afton 101 School District	9%	2,522
49	California	Fresno Unified School District	46%	73,353	Golden Valley Unified School District	12%	1,960
50	New York	Rochester City School District	43%	30,295	West Irondequoit Central School District	9%	3,608

**The initial publication of this report included a shared border between Flint City Schools and Swartz Creek, MI. After publication of the report, local sources notified us that the 2014 U.S. Census file contained an error and that these two districts do not actually share a border. We have notified the Census of the error in their file and omitted the border from our report.

SPOTLIGHT

DETROIT / GROSSE POINTE

Today, the most segregating school district border in the country separates Detroit Public Schools, where 1 in 2 children live in poverty, from the Grosse Pointe Public School System, where just 1 out of every 15 children comes from an impoverished household.



The divide between these two districts has a long history: Grosse Pointe was among the districts that challenged the cross-district Detroit desegregation plan in *Milliken v. Bradley* (see page 3).^{xxxiii} Because Grosse Pointe, along with Detroit's other suburban neighbors, refused to participate in an area-wide solution, the United States Supreme Court was forced to rule on the legality of requiring them to do so.^{xxxiv} The result of the case—a declaration that local autonomy was more important than meaningful desegregation of public schools^{xxxv}—left American schoolchildren trapped in a system of inviolable school district borders.

Income segregation in the Detroit metropolitan area parallels the racial segregation that inspired the *Milliken* challenge. In 1970, when the case was first heard by the lower court, the poverty rate among all residents of the Grosse Pointe Public School System was just 3 percent, while in Detroit Public Schools, the rate of poverty was 5 times higher at 15 percent. Today, the disparities are far more stark. By 2012, Grosse Pointe had experienced a slight increase in its resident poverty rate to five percent. In Detroit, though, the poverty rate ballooned over this period to include 38 percent of individuals living within the district's boundaries. The 12-percentage-point gap in poverty rates between Detroit and Grosse Pointe when *Milliken* was first argued in 1970 grew to a 33 percentage point chasm by 2012—a 175 percent increase—furthering the legacy of inequality along this border.



The impact of the Supreme Court's ruling in *Milliken* extends far beyond the school districts named in this case. By finding that integration efforts should stop at school district borders, the Supreme Court condoned vast disparities between school districts—even those that are neighbors. Foreseeing what was to come, Justice Thurgood Marshall wrote in his dissent in *Milliken*:

The rights at issue in this case are too fundamental to be abridged on grounds as superficial as those relied on by the majority today. We deal here with the right of all of our children... to an equal start in life and to an equal opportunity to reach their full potential as citizens. Those children who have been denied that right in the past deserve better than to see fences thrown up to deny them that right in the future. Our Nation, I fear, will be ill-served by

the Court’s refusal to remedy separate and unequal education, for unless our children begin to learn together, there is little hope that our people will ever learn to live together.^{xxxvi}

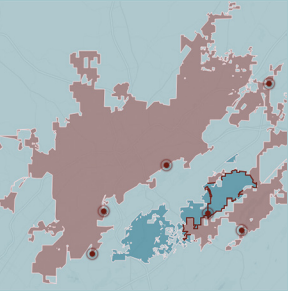
While interdistrict racial segregation has declined in recent decades, cross-district disparities based on students’ socioeconomic background are on the rise.^{xxxvii} Increasingly, the story of American school districts is a tale of two cities: one well-off and one poor – one with the funds necessary to provide its children ample educational opportunities and one without adequate resources to help its children catch up. For those committed to equity in public schooling, Marshall’s prediction proved prescient as we are left to contend with the regrettable aftermath of *Milliken*, not only in Detroit and Grosse Pointe, but across the entire nation.

Table 1. Detroit and Grosse Pointe school district data

School district	Enrollment	Poverty rate	Median property value	Median household income
Detroit	49,043	49%	\$45,100	\$26,087
Grosse Pointe	8,328	7%	\$220,100	\$90,542

BIRMINGHAM / VESTAVIA HILLS & MOUNTAIN BROOK

Birmingham City School District has more than twice as many neighbors as the average school district due to its snaking, unnatural shape. Of the 13 borders it shares with adjoining districts, 6 are among the 50 most segregating borders in the country—more than any other district in America. Two of Birmingham’s borders are particularly stark examples of the discrepancies in wealth between Birmingham and its well-off neighbors. Vestavia Hills City School District and Mountain Brook City School District have poverty rates of 6.2 and 6.5 percent, respectively, among school-age children. By comparison, after a steady industrial decline and a sizeable exodus of white and middle class residents,^{xxxviii} 49.2 percent of Birmingham’s school-age children now live in poverty.



Birmingham used to border a smaller number of more sizeable school districts, including Jefferson County School District, which has been carved into pieces over time. Five of the six districts sharing Birmingham’s worst borders, including both Vestavia Hills and Mountain Brook, were created when they seceded from Jefferson County to form their own separate school systems.^{xxxix} Alabama law permits municipalities with 5,000 or more residents to form their own school districts, independent from larger county districts.^{xl} In Jefferson County, these secessions established wealthy, enclave districts that present a stark contrast to Birmingham. In Birmingham, the median household income hovers around \$31,200 and the median value of owner-occupied houses is \$86,100. Among the 5 districts mentioned above, the average median household income is over \$86,000 and the average median value of owner-occupied houses is nearly \$320,000.^{xli}

SPOTLIGHT

While Birmingham's suburban neighbors grew more populous and prospered in recent decades, the city's enrollments have plummeted and its poverty rates have soared. In the 1994-95 school year, Birmingham enrolled 41,839 students. By 2013-14, only 24,858 students were enrolled—a 41 percent decrease. Over the same period, Vestavia Hills' enrollment grew by 61 percent, from 4,164 to 6,762 students, and Mountain Brook grew by 23 percent, from 3,650 students to 4,477.^{xlii} The departure of middle class and well-to-do families during this time left Birmingham City not only smaller, but also significantly poorer. The poverty rate among Birmingham's school-age population was 36 percent in 1995, but 49 percent in 2014.^{xliii}

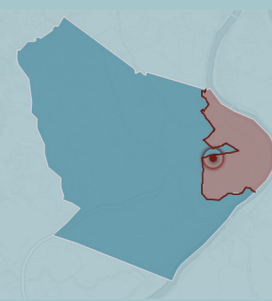
This kind of shift creates difficulties for a school district. Cities with dwindling enrollments are often forced to take measures to address the logistics of educating fewer students in a system built to accommodate many more. For example, according to the RAND Corporation, 70 urban school districts underwent school closures in the period between 2000 and 2010, on average closing 11 schools.^{xliv} Many of the districts that lost students also saw their concentrations of students in poverty increase, creating further challenges for these school systems to overcome. The ramifications of such enrollment shifts have an impact on many urban districts throughout the country, Birmingham included, leaving them increasingly poor and under-enrolled, while wealthier, suburban neighbors like Vestavia Hills and Mountain Brook are often unaffected. Of all the barriers Birmingham's students must overcome, the district borders arguably are most harmful.

Table 2. Birmingham, Vestavia Hills and Mountain Brook school district data

<i>School District</i>	<i>Enrollment</i>	<i>Poverty rate</i>	<i>Median property value</i>	<i>Median household income</i>
Birmingham	24,858	49%	\$86,100	\$31,217
Vestavia Hills	6,762	6%	\$339,000	\$81,352
Mountain Brook	4,477	7%	\$558,900	\$130,259

CLAIRTON / WEST JEFFERSON HILLS

Clairton and West Jefferson Hills school districts serve students in Allegheny County, Pennsylvania, just outside of Pittsburgh. Like much of western Pennsylvania and other Rust Belt areas, Allegheny County has suffered an enormous decline in manufacturing jobs. Clairton in particular was hit hard by the loss of the steel industry, and today, 48.2 percent of school-age children in the city live in poverty. Not all of Allegheny's 130 municipalities^{xlv} were equally affected by economic shifts in the region, however. Some communities, like those served by the West Jefferson Hills School District, fared better in the downturn, leading to increasing disparities as neighboring communities that were more reliant on manufacturing jobs became poverty-stricken. West Jefferson Hills School District enrolls children from the boroughs of Jefferson Hills, West Elizabeth, and Pleasant Hills, which collectively have a child poverty rate of 6.5 percent—41.7 percentage points lower than in neighboring Clairton.



SPOTLIGHT

Between 1979 and 1987, the Pittsburgh region lost 133,000 manufacturing jobs, and at its worst, the metropolitan area's unemployment rate was 17.1 percent.^{xlvi} At the time, in 1983, the national rate hovered around ten percent.^{xlvi} In Clairton specifically, the unemployment rate more than doubled between 1970 and 1990, from 5 to 12 percent, while the population shrank by 36 percent, from over 15,000 to less than 10,000. Over the same period, the poverty rate among Clairton residents rose by 47 percent, from 15 percent to 22 percent. By 2010, the population had fallen to 7,023 people, the unemployment rate had risen soared to 14 percent, compared with 9.6 percent nationwide,^{xlvi} and the poverty rate had jumped to 24 percent, 9 points higher than the national rate.^{xlvi}

The towns within West Jefferson Hills School District seem to have been spared this fate. Today, the district has a healthy property tax base, generating a high level of local funding for schools. Only 27 percent of West Jefferson Hills' non-federal education dollars had to come from the state of Pennsylvania in 2013-14, while in the same year Clairton generated so little revenue from local sources that 71 percent of non-federal revenues had to come from the state. This puts West Jefferson Hills in a much less tenuous position when state funding for education is uncertain, which has been a persistent problem since the state's budget was slashed in 2011. Last school year, the state budget remained unapproved until late March, leaving state education funding in limbo.^{li} Last winter, West Jefferson Hills approved plans for construction of a new, \$67.4 million high school, complete with an eight-lane swimming pool and terrazzo tiles throughout the building.^{lii} Meanwhile, with such a large portion of its budget caught in legislative gridlock, Clairton was forced to contemplate the possibility of closing down the entire school district mid-year.^{liii}



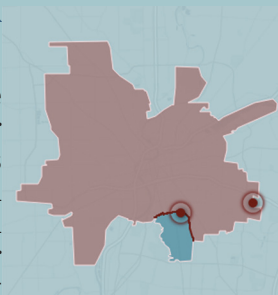
Clairton is like many other communities struggling with the consequences of deindustrialization. Across the country, cities and towns that were once prosperous and growing are now grappling with population loss, unemployment, crime, and poverty.^{liv} Their school systems, like Clairton City School District, face the daunting task of serving students burdened by poverty in their homes and neighborhoods, all too often with less funding than other better-off districts in their state. And frequently, in a school district right next door—one like West Jefferson Hills—other students are afforded greater educational opportunities.

Table 3. Clairton and West Jefferson Hills school district data

<i>School District</i>	<i>Enrollment</i>	<i>Poverty rate</i>	<i>Median property value</i>	<i>Median household income</i>
Clairton	785	48%	\$48,700	\$29,158
West Jefferson Hills	2,831	7%	\$157,200	\$67,596

DAYTON / BEAVERCREEK & OAKWOOD

In its heyday, Dayton, Ohio was a particularly productive and prosperous industrial city.^{lv} But, as with many other cities throughout the Rust Belt, Dayton lost the majority of its manufacturing industry during the second half of the 20th century, and with it went much of its population. Dayton is in Montgomery County, and in 1930, it was home to over 70 percent of county residents. By the beginning of the 21st century, though, with the loss of city residents and the growth of suburbs, less than 20 percent of metropolitan-area residents lived in Dayton.^{lvi} Today, Dayton City School District has a poverty rate of 47.2 percent among school-age children, and two of its borders are among the most segregating in the country. Beavercreek City School District and Oakwood City School District have school-age poverty rates of 6.6 percent and 7.0 percent, respectively.



The state of Ohio has tried to curb the restrictive nature of school district borders, but these efforts fall short for the children of Dayton and the state's other urban centers. In 1989, Ohio started an interdistrict open enrollment program, permitting students to enroll in districts other than the one whose boundaries they live within.^{lvii} Participation in the open enrollment program is optional for school districts, however; they may choose, or refuse, to allow students from other districts to enroll in their schools. And making the program voluntary has made it essentially useless to students in Dayton. Rates of participation are very low among suburban districts surrounding Ohio's largest cities. Only four of Dayton's ten neighboring districts allow students from outside of their borders to attend their schools.^{lviii} Neither Beavercreek nor Oakwood City participates in the interdistrict open enrollment program,^{lix} so students in Dayton are barred from enrolling in better-resourced schools in these neighboring districts.

As a result, elementary students at Eastmont Park in Dayton cannot opt to enroll in Parkwood Elementary in Beavercreek. Both schools sit within a mile of the Dayton-Beavercreek border. The state of Ohio assigned Eastmont Park a grade of 'F' for its progress towards closing achievement gaps based on race, disability, and income,^{lx} while Parkwood Elementary received a grade of 'A'.^{lxi} Parkwood has a demonstrated ability to better serve low-income children academically, but it remains just out of reach to the children at Eastmont, where 98 percent are eligible for free or reduced-price lunch, despite an explicit state policy permitting interdistrict open enrollment.

Ohio's policy fails to overcome the obstacles of interdistrict income segregation,

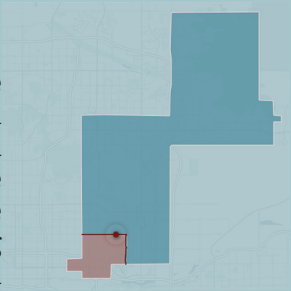
and it is not alone: 32 states have interdistrict open enrollment policies that limit eligibility to students in select schools or districts, or make it optional for districts to accept transfer students.^{lxii}

Table 4. Dayton, Beavercreek and Oakwood school district data

School District	Enrollment	Poverty rate	Median property value	Median household income
Dayton	14,209	47%	\$67,200	\$27,938
Beavercreek	7,454	7%	\$183,300	\$81,661
Oakwood	2,087	7%	\$232,000	\$100,724

BALSZ / SCOTTSDALE

Balsz Elementary School District serves students on the east side of Phoenix, sharing its northern and eastern borders with Scottsdale Unified School District. Although these two districts are located right next to each other, the characteristics of their students and the resources they have to educate them are vastly different. The poverty rate among school-age children in Scottsdale is 10.6 percent, while in Balsz, over half of children (51 percent) live in poverty.



This gap is likely due in part to the fact that Balsz has seen a sharp rise in its immigrant population over the past few decades. In 1980, Balsz Elementary and Scottsdale Unified school districts had nearly identical rates of foreign-born residents living within their boundaries—both at almost five percent. Just over 30 years later, the proportion of foreign-born residents had risen in both districts, but in Balsz this increase was particularly precipitous. In 2012, 11 percent of the population living within Scottsdale Unified were born outside of the United States, while in Balsz this group had grown to comprise 23 percent of all residents—an increase of over 400 percent. Individuals who have immigrated from another country are more likely to be low-income than those native to the States,^{lxiii} so it is likely no coincidence that during this same period, the poverty rate among inhabitants of Balsz took a similar leap, from 11 percent in 1980 to 30 percent in 2012. Not surprisingly, school enrollment demographics follow community demographics. Today, 7 percent of Scottsdale’s students have limited English proficiency, while in Balsz, a full 46 percent of students do.^{lxiv} With such large shares of students from households with low-income and limited English proficiency, Balsz Elementary School District serves a student population that faces far more academic obstacles than Scottsdale Unified.

We know that schools need to invest greater resources in educating low-income



students and English language learners in order to narrow achievement gaps between them and their better-off and English-proficient peers. But despite the extra costs associated with providing supplemental services for students in poverty and those with limited English proficiency, Balsz has far less to spend than Scottsdale does. Balsz is only able to raise \$3,572 per-pupil in local tax revenue for education from its small local tax base, while Scottsdale brings in \$7,793 per-pupil from local sources. Arizona’s state education funding isn’t generous enough to make up the difference: Scottsdale receives \$1,380 per-pupil from the state, and Balsz receives \$2,866 per-pupil—an amount not large enough to eliminate the disparity. In total, Balsz’s per-student budget is a full 30% less than Scottsdale’s—a far cry from the 25% more funding for each low-income student that Jackson, Johnson, and Persico (2016) suggest would be needed to close the outcomes gap.^{lxv}

Like Balsz, cities and school systems across the country have been shaped over decades by newcomers to the United States, many of whom are children. According to research from the Urban Institute, almost one in four children in the United States had at least one immigrant parent in 2013.^{lxvi} Schools in America have a legal responsibility to provide an education to children living in this country regardless of their immigrant status.^{lxvii} This is a noble obligation, one that is fundamental as long we aim to be the land of opportunity, but it takes resources—resources that are in short supply in the needy communities that often serve immigrant children.

Table 5. Balsz and Scottsdale school district data

<i>School District</i>	<i>Enrollment</i>	<i>Poverty rate</i>	<i>Median property value</i>	<i>Median house-hold income</i>
Balsz	2,719	51%	\$142,200	\$36,488
Scottsdale	24,866	11%	\$349,700	\$67,699

SUMMARY

U.S. school districts are increasingly segregated by income.^{lxviii} This problem has arisen in part because income-based sorting across district borders is incentivized by current education funding systems, and combatting interdistrict segregation is made very difficult by Supreme Court precedent. Specifically:

- The Supreme Court's ruling in *Milliken v. Bradley* significantly reduced the possibility of achieving meaningful integration by establishing that desegregation efforts could not be enforced across school district boundaries.
- The lack of a general mandate to redraw district borders either to address segregation or to respond to demographic shifts leaves little recourse for addressing income gaps between districts.
- The American school finance system relies heavily on local property taxes to raise funds for education, and in most states, these funds don't cross school district borders.
 - This incentivizes income segregation, especially in the 38 states that allow school districts to be drawn along non-county lines, because affluent communities can keep their resources in schools that serve their own children, locking out neighboring students in need.
 - This creates funding disparities among high- and low-poverty districts, because school districts in impoverished areas can raise fewer dollars from local sources. This is especially harmful because high-needs districts are charged with the resource-intensive task of educating our most disadvantaged children.

This report has highlighted the worst examples of income segregation across district borders. The stories of Detroit, Birmingham, Clairton, Dayton, and Balsz are extremes, but they exemplify problems that can be seen all across the country.

- In the 2013-14 school year, 3,975 school district borders divided 2 communities with childhood poverty rate differences of 14 percentage points or more. Such a difference is twice the national average difference of seven percentage points.
- The 50 most segregating school district borders in the country separate districts with poverty rate differences ranging from 34 to 42 percentage points. The average gap in this group is 37 percentage points, more than 5 times the national average. The average poverty rate among the high-poverty districts along these borders is 46 percent, while the average poverty rate among the low-poverty districts is just 9 percent.
- Across the 50 most segregating borders, the high-poverty districts on one side of these boundaries have, on average, median household incomes and median owner-occupied property values that are \$42,379 and \$130,890 less, respectively, than their low-poverty district neighbors. Because local revenues for education are linked to property wealth, high-poverty neighbors generate \$4,504 less per-pupil locally than their low-poverty neighbors.
- Twenty-nine of the country's 50 most segregating borders are in the Rust Belt.
- The states with the highest number of these most segregating borders are Ohio (9), Alabama (7), New York (6), and Pennsylvania (6). No other state contains more than 3 borders that are counted among the country's 50 most segregating. Only one state that draws some or all of its school districts along county lines (Alabama) appears on the list.
- Low-poverty districts with the 50 worst borders are much smaller than their high-poverty counterparts, with the high-poverty neighbors enrolling 15,000

SUMMARY

more students, on average.

Twenty-six million children live within high-poverty school districts, and often, there are greater educational opportunities being enjoyed by their peers right next door. These divisions are harmful for all students, but especially for those who reside on the wrong side of these borders. The borders that separate these districts are effectively impenetrable to the neediest children from families with limited means, compounding the inequalities public education should be conquering. In effect, school district boundaries have become the new status quo for separate but unequal. It's time to rethink this system.

*For a complete list of the data used in creating this report, please visit:
<http://viz.edbuild.org/maps/2016/fault-lines/>*



APPENDIX A: DATA

DATA SOURCES FOR BORDERS DATASET

To create the school district border dataset, EdBuild used multiple data sources:

- U.S. Census Bureau's Geography Division's biennial school district boundary shapefile for the 2013-14 school year
 - All school districts with geographic boundaries, including files for unified (10,918 districts), elementary (2,155 districts), and secondary (517 districts) school districts, totaling 13,590 districts
 - excludes most charter districts because they generally do not have geographic boundaries
- U.S. Census Bureau's Small Area Income and Poverty Estimates (SAIPE) for school districts in 2014
 - estimates of the number of school-age children—those between the ages of 5 and 17—and the number of school-age children living in poverty, at the level of individual school districts
- National Center for Education Statistics (NCES), Common Core of Data (CCD) for the 2013-14 school year
 - total enrollment, English language learner enrollment and special education enrollment at the school-district level
 - school latitude and longitude
- Bureau of Indian Education (BIE), BIE Schools
 - school address, latitude, and longitude
- U.S. Census, American Community Survey (ACS) 2014, 5-year estimates for school districts
 - median household income and median owner-occupied property value

SCHOOL DISTRICT EXCLUSIONS

Edbuild employed several exclusion criteria in compiling our borders dataset:

- EdBuild excluded all secondary school districts from our dataset, leaving 13,073 unified and elementary districts. There are three types of school districts: unified, elementary, and secondary. twenty-four states and the District of Columbia have only unified districts, and the remaining 26 states have all 3 types. Unified districts are geographically distinct, but secondary and elementary districts overlap. In order to cover all areas of the United States with no overlapping boundaries, EdBuild removed all secondary districts since the elementary districts are smaller and cover all areas that the secondary districts do.
- EdBuild removed all school districts that had either zero schools or zero enrollments based on the CCD data for the 2013-14 school year.
- In order to avoid identifying districts that were established by the government to serve a particular population, EdBuild removed two categories of districts: 1) districts that contained only Bureau of Indian Education (BIE) schools, based on the BIE school locations and the NCES school locations, and 2) military school districts (this only excluded one district in Arizona).
- In order to look only at districts with a reasonably large public school participation rate, EdBuild excluded districts where the CCD-reported enrollment in 2013-14 was less than 25% the size of the SAIPE estimated school-age population.
- Because EdBuild's analysis only identifies within-state school district neighbors, Hawaii and the District of Columbia were excluded since they each include only one district.

When creating the list of the 50 most segregating borders EdBuild applied 1 additional exclusion:

- In order to avoid identifying borders between sparsely populated and remote districts where policy solutions that might address the segregating nature of school district borders are unlikely to involve meaningful changes in schools' feeder patterns, EdBuild excluded all rural districts.

APPENDIX A: METHODOLOGY

To begin, EdBuild conducted a spatial network analysis of all elementary and unified districts, for each state separately, using R. This process identified all pairs of school district neighbors that share a land border within a state (districts whose shared border exists entirely along a large body of water were not considered to be neighbors). Then, an algorithm identified the shape and location of each shared border and compiled these lines into a new shapefile. The separate state shapefiles were further compiled into a single national shapefile.

Each border in the dataset was assigned a unique identifier, but also retained the NCES-established identifiers for the two associated school districts. These NCES IDs are common to all of the datasets used for this analysis and were used to join the additional data from the SAIPE, CCD, and ACS onto the borders dataset. Once this data was included, EdBuild conducted the first set of exclusions described above. This resulted in a dataset that contains 34,698 borders, or pairs of district neighbors.

To determine how segregating each border is, EdBuild calculated the absolute value of the difference in school-age poverty rates for the two school districts sharing each boundary. After excluding rural school districts as described above, this measure was used to rank the degree of segregation associated with each border, relative to others in their state as well as in the entire country.

ADDITIONAL DATA AND ANALYSES

To explore how poverty rates have changed within the Detroit Public Schools and the Grosse Pointe Public School System between 1970 and 2012, EdBuild used additional Census data retrieved through the National Historic Geographic Information System. In 1970, poverty rate data comes from the decennial census, while in 2012 they come from five-year ACS estimates. Because Census data were not available at the school district level in 1970, EdBuild used aggregated data from the census tract level to approximate these figures.

To do this, EdBuild overlaid shapefiles of census tracts in 1970 and 2012, separately, over the 2014 school district boundaries for the two school districts. All tracts from a given year that overlapped partially or entirely with the Detroit or Grosse Pointe school boundaries were used in the estimate for that district in that year. Once EdBuild identified the tracts associated with each district in both 1970 and 2012, EdBuild joined on tract-level Census data for poverty rates among the total population. These rates within individual tracts were aggregated up to generate estimates at the school district level for both Detroit and Grosse Pointe.

To explore how the immigrant population and poverty rates have changed in Balsz and Scottsdale between 1980 and 2012, EdBuild again used additional Census data retrieved through the National Historic Geographic Information System. In 1980, poverty rate data comes from the decennial census, while in 2012 they come from five-year ACS estimates. Because Census data were not available at the school district level in 1980, aggregated data from the census tract level was used to approximate these figures.

As described above, shapefiles of census tracts in 1980 and 2012, separately, were overlaid with the 2014 school district boundaries for the two school districts. All tracts from a given year that overlapped partially or entirely with the Balsz or Scottsdale school boundaries were used in the estimate for that district in that year (in the case of Balsz and Scottsdale, some census tracts fell into both districts and

APPENDIX A: METHODOLOGY

were used in the estimates for each). Once the tracts associated with each district in both 1980 and 2012 were identified, on tract-level Census data was joined on the nativity and poverty rates among the total population. The rates within individual tracts were aggregated up to generate estimates at the school district level for both Balsz and Scottsdale.

For all figures presenting state or local revenues within school districts, these data come from the U.S. Census, Public School Systems Finance data for the 2013-14 school year. Because they can contribute to large fluctuations in district revenues from year to year, capital outlays were excluded from the calculation of state revenues, and funds generated through the sale of property were excluded from the calculation of local revenues.

APPENDIX B:

WHY WE USE SCHOOL-AGE POVERTY, NOT FREE- AND REDUCED-PRICE LUNCH

The numbers in this report are not the often-referenced United States Department of Agriculture (USDA) Free and Reduced Price Lunch (FRL) eligibility numbers, which include students from households with income up to 185% of that poverty level. To give a sense of how these measures differ, in 2014, the household income for a family of four living at the federal poverty line is \$23,850. However, children from the same-sized family are eligible for reduced price lunch up to an income of \$44,123. This creates a large discrepancy between the number of children considered to be living in “poverty” by the federal definition and the number participating in the school lunch program. In other words, in cities and towns across the country, there are a lot more students eligible for FRL than there are below the federal poverty line.

Recent changes to how the USDA implements the free lunch program have made FRL measures far less reliable than they once were. Under the Community Eligibility Provision (CEP) of the Healthy, Hunger-Free Kids Act of 2010, schools serving significantly needy student populations may opt to provide free lunches to their whole school community, rather than individual needy students. The CEP option eliminates the need for schools to collect student-level data if 40% or more of their students are already certified to participate in other federal assistance programs, like SNAP (food stamps) or Temporary Assistance for Needy Families. This program is positive from the prospective of increasing access to free lunch for children, and for reducing administrative burden, but it also reduces the accuracy of FRL numbers for estimating the number of low-income children within a district. For this reason, EdBuild prefers to report on poverty levels.

As described in the methodology section, the measure of school district poverty used in this report uses data from the U.S. Census, Small Area Income and Poverty Estimates. This measure is an estimate of the rate of poverty among school-age children (between the ages of 5 and 17). Here are examples of a few well-known districts to help with interpretation of poverty rates of differing magnitude.

Districts	Poverty-rate
San Francisco Unified School District, CA Charlotte Mecklenburg Schools, NC Fairfax County Public Schools, VA	< 20%
Oakland Unified School District, CA Tucson Unified District, AZ Minneapolis Public School District, MN	20% - 30%
Baltimore City Public Schools, MD Houston Independent School District, TX Chicago Public School District, IL	30% - 40%
Detroit Public Schools, MI Orleans Parish School District, LA Buffalo City School District, NY Fresno Unified School District, CA	40%+

APPENDIX C: ENDNOTES

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